

SEQUENCE LISTING

<110> Representative: Greenlee, Winner and Sullivan, P.C.
HODGES, Robert S
TRIPET, Brian

<120> COMPOSITIONS AND METHODS FOR MODIFICATION AND PREVENTION OF SARS
CORONAVIRUS INFECTIVITY

<130> 6-04 WO

<140> PCT (not assigned)

<141> 2005-02-14

<150> US 60/544,410

<151> 2004-02-12

<160> 106

<170> PatentIn version 3.3

<210> 1

<211> 3768

<212> DNA

<213> SARS coronavirus Urbani

<220>

<221> CDS

<222> (1)..(3768)

<400> 1

atg ttt att ttc tta tta ttt ctt act ctc act agt ggt agt gac ctt	48
Met Phe Ile Phe Leu Leu Phe Leu Thr Leu Thr Ser Gly Ser Asp Leu	
1 5 10 15	
gac cgg tgc acc act ttt gat gat gtt caa gct cct aat tac act caa	96
Asp Arg Cys Thr Thr Phe Asp Asp Val Gln Ala Pro Asn Tyr Thr Gln	
20 25 30	
cat act tca tct atg agg ggg gtt tac tat cct gat gaa att ttt aga	144
His Thr Ser Ser Met Arg Gly Val Tyr Tyr Pro Asp Glu Ile Phe Arg	
35 40 45	
tca gac act ctt tat tta act cag gat tta ttt ctt cca ttt tat tct	192
Ser Asp Thr Leu Tyr Leu Thr Gln Asp Leu Phe Leu Pro Phe Tyr Ser	
50 55 60	
aat gtt aca ggg ttt cat act att aat cat acg ttt ggc aac cct gtc	240
Asn Val Thr Gly Phe His Thr Ile Asn His Thr Phe Gly Asn Pro Val	
65 70 75 80	
ata cct ttt aag gat ggt att tat ttt gct gcc aca gag aaa tca aat	288
Ile Pro Phe Lys Asp Gly Ile Tyr Phe Ala Ala Thr Glu Lys Ser Asn	
85 90 95	
gtt gtc cgt ggt tgg gtt ttt ggt tct acc atg aac aac aag tca cag	336
Val Val Arg Gly Trp Val Phe Gly Ser Thr Met Asn Asn Lys Ser Gln	
100 105 110	
tcg gtg att att att aac aat tct act aat gtt gtt ata cga gca tgt	384
Ser Val Ile Ile Ile Asn Asn Ser Thr Asn Val Val Ile Arg Ala Cys	
115 120 125	
aac ttt gaa ttg tgt gac aac cct ttc ttt gct gtt tct aaa ccc atg	432
Asn Phe Glu Leu Cys Asp Asn Pro Phe Phe Ala Val Ser Lys Pro Met	
130 135 140	
ggg aca cag aca cat act atg ata ttc gat aat gca ttt aat tgc act	480

Gly 145	Thr	Gln	Thr	His	Thr 150	Met	Ile	Phe	Asp	Asn 155	Ala	Phe	Asn	Cys	Thr 160	
ttc	gag	tac	ata	tct	gat	gcc	ttt	tcg	ctt	gat	ggt	tca	gaa	aag	tca	528
Phe	Glu	Tyr	Ile	Ser 165	Asp	Ala	Phe	Ser	Leu 170	Asp	Val	Ser	Glu	Lys 175	Ser	
ggt	aat	ttt	aaa	cac	tta	cga	gag	ttt	gtg	ttt	aaa	aat	aaa	gat	ggg	576
Gly	Asn	Phe	Lys 180	His	Leu	Arg	Glu	Phe 185	Val	Phe	Lys	Asn	Lys 190	Asp	Gly	
ttt	ctc	tat	gtt	tat	aag	ggc	tat	caa	cct	ata	gat	gta	gtt	cgt	gat	624
Phe	Leu	Tyr 195	Val	Tyr	Lys	Gly	Tyr 200	Gln	Pro	Ile	Asp	Val 205	Val	Arg	Asp	
cta	cct	tct	ggt	ttt	aac	act	ttg	aaa	cct	att	ttt	aag	ttg	cct	ctt	672
Leu	Pro 210	Ser	Gly	Phe	Asn	Thr 215	Leu	Lys	Pro	Ile	Phe 220	Lys	Leu	Pro	Leu	
ggt	att	aac	att	aca	aat	ttt	aga	gcc	att	ctt	aca	gcc	ttt	tca	cct	720
Gly 225	Ile	Asn	Ile	Thr	Asn 230	Phe	Arg	Ala	Ile	Leu 235	Thr	Ala	Phe	Ser	Pro 240	
gct	caa	gac	att	tgg	ggc	acg	tca	gct	gca	gcc	tat	ttt	gtt	ggc	tat	768
Ala	Gln	Asp	Ile	Trp 245	Gly	Thr	Ser	Ala	Ala 250	Ala	Tyr	Phe	Val	Gly 255	Tyr	
tta	aag	cca	act	aca	ttt	atg	ctc	aag	tat	gat	gaa	aat	ggt	aca	atc	816
Leu	Lys	Pro	Thr 260	Thr	Phe	Met	Leu	Lys 265	Tyr	Asp	Glu	Asn	Gly 270	Thr	Ile	
aca	gat	gct	gtt	gat	tgt	tct	caa	aat	cca	ctt	gct	gaa	ctc	aaa	tgc	864
Thr	Asp	Ala 275	Val	Asp	Cys	Ser	Gln 280	Asn	Pro	Leu	Ala	Glu 285	Leu	Lys	Cys	
tct	gtt	aag	agc	ttt	gag	att	gac	aaa	gga	att	tac	cag	acc	tct	aat	912
Ser	Val 290	Lys	Ser	Phe	Glu	Ile 295	Asp	Lys	Gly	Ile	Tyr 300	Gln	Thr	Ser	Asn	
ttc	agg	gtt	gtt	ccc	tca	gga	gat	gtt	gtg	aga	ttc	cct	aat	att	aca	960
Phe	Arg	Val	Val	Pro	Ser 310	Gly	Asp	Val	Val	Arg 315	Phe	Pro	Asn	Ile	Thr 320	
aac	ttg	tgt	cct	ttt	gga	gag	gtt	ttt	aat	gct	act	aaa	ttc	cct	tct	1008
Asn	Leu	Cys	Pro	Phe 325	Gly	Glu	Val	Phe	Asn 330	Ala	Thr	Lys	Phe	Pro 335	Ser	
gtc	tat	gca	tgg	gag	aga	aaa	aaa	att	tct	aat	tgt	gtt	gct	gat	tac	1056
Val	Tyr	Ala	Trp 340	Glu	Arg	Lys	Lys	Ile 345	Ser	Asn	Cys	Val	Ala 350	Asp	Tyr	
tct	gtg	ctc	tac	aac	tca	aca	ttt	ttt	tca	acc	ttt	aag	tgc	tat	ggc	1104
Ser	Val 355	Leu	Tyr	Asn	Ser	Thr	Phe 360	Phe	Ser	Thr	Phe	Lys 365	Cys	Tyr	Gly	
gtt	tct	gcc	act	aag	ttg	aat	gat	ctt	tgc	ttc	tcc	aat	gtc	tat	gca	1152
Val	Ser 370	Ala	Thr	Lys	Leu	Asn 375	Asp	Leu	Cys	Phe	Ser 380	Asn	Val	Tyr	Ala	
gat	tct	ttt	gta	gtc	aag	gga	gat	gat	gta	aga	caa	ata	gcg	cca	gga	1200
Asp	Ser	Phe	Val	Val	Lys 390	Gly	Asp	Asp	Val	Arg 395	Gln	Ile	Ala	Pro	Gly 400	
caa	act	ggt	gtt	att	gct	gat	tat	aat	tat	aaa	ttg	cca	gat	gat	ttc	1248
Gln	Thr	Gly	Val	Ile 405	Ala	Asp	Tyr	Asn	Tyr 410	Lys	Leu	Pro	Asp	Asp	Phe	
atg	ggt	tgt	gtc	ctt	gct	tgg	aat	act	agg	aac	att	gat	gct	act	tca	1296
Met	Gly	Cys	Val	Leu	Ala	Trp	Asn	Thr	Arg	Asn	Ile	Asp	Ala	Thr	Ser	

420							425							430							
act Thr	ggt Gly	aat Asn 435	tat Tyr	aat Asn	tat Tyr	aaa Lys	tat Tyr 440	agg Arg	tat Tyr	ctt Leu	aga Arg	cat His 445	ggc Gly	aag Lys	ctt Leu	1344					
agg Arg	ccc Pro 450	ttt Phe	gag Glu	aga Arg	gac Asp	ata Ile 455	tct Ser	aat Asn	gtg Val	cct Pro	ttc Phe 460	tcc Ser	cct Pro	gat Asp	ggc Gly	1392					
aaa Lys 465	cct Pro	tgc Cys	acc Thr	cca Pro	cct Pro 470	gct Ala	ctt Leu	aat Asn	tgt Cys	tat Tyr 475	tgg Trp	cca Pro	tta Leu	aat Asn	gat Asp 480	1440					
tat Tyr	ggt Gly	ttt Phe	tac Tyr	acc Thr 485	act Thr	act Thr	ggc Gly	att Ile	ggc Gly 490	tac Tyr	caa Gln	cct Pro	tac Tyr	aga Arg 495	gtt Val	1488					
gta Val	gta Val	ctt Leu	tct Ser 500	ttt Phe	gaa Glu	ctt Leu	tta Leu	aat Asn 505	gca Ala	ccg Pro	gcc Ala	acg Thr	gtt Val 510	tgt Cys	gga Gly	1536					
cca Pro	aaa Lys	tta Leu 515	tcc Ser	act Thr	gac Asp	ctt Leu	att Ile 520	aag Lys	aac Asn	cag Gln	tgt Cys	gtc Val 525	aat Asn	ttt Phe	aat Asn	1584					
ttt Phe	aat Asn 530	gga Gly	ctc Leu	act Thr	ggt Gly	act Thr 535	ggt Gly	gtg Val	tta Leu	act Thr	cct Pro 540	tct Ser	tca Ser	aag Lys	aga Arg	1632					
ttt Phe 545	caa Gln	cca Pro	ttt Phe	caa Gln	caa Gln 550	ttt Phe	ggc Gly	cgt Arg	gat Asp	gtt Val 555	tct Ser	gat Asp	ttc Phe	act Thr	gat Asp 560	1680					
tcc Ser	gtt Val	cga Arg	gat Asp	cct Pro 565	aaa Lys	aca Thr	tct Ser	gaa Glu	ata Ile 570	tta Leu	gac Asp	att Ile	tca Ser	cct Pro 575	tgc Cys	1728					
tct Ser	ttt Phe	ggg Gly	ggt Gly 580	gta Val	agt Ser	gta Val	att Ile	aca Thr 585	cct Pro	gga Gly	aca Thr	aat Asn	gct Ala 590	tca Ser	tct Ser	1776					
gaa Glu	gtt Val	gct Ala 595	gtt Val	cta Leu	tat Tyr	caa Gln	gat Asp 600	gtt Val	aac Asn	tgc Cys	act Thr	gat Asp 605	gtt Val	tct Ser	aca Thr	1824					
gca Ala	att Ile 610	cat His	gca Ala	gat Asp	caa Gln	ctc Leu 615	aca Thr	cca Pro	gct Ala	tgg Trp	cgc Arg 620	ata Ile	tat Tyr	tct Ser	act Thr	1872					
gga Gly 625	aac Asn	aat Asn	gta Val	ttc Phe	cag Gln 630	act Thr	caa Gln	gca Ala	ggc Gly	tgt Cys 635	ctt Leu	ata Ile	gga Gly	gct Ala	gag Glu 640	1920					
cat His	gtc Val	gac Asp	act Thr	tct Ser 645	tat Tyr	gag Glu	tgc Cys	gac Asp	att Ile 650	cct Pro	att Ile	gga Gly	gct Ala	ggc Gly 655	att Ile	1968					
tgt Cys	gct Ala	agt Ser	tac Tyr 660	cat His	aca Thr	gtt Val	tct Ser	tta Leu 665	tta Leu	cgt Arg	agt Ser	act Thr	agc Ser 670	caa Gln	aaa Lys	2016					
tct Ser	att Ile	gtg Val 675	gct Ala	tat Tyr	act Thr	atg Met	tct Ser 680	tta Leu	ggt Gly	gct Ala	gat Asp	agt Ser 685	tca Ser	att Ile	gct Ala	2064					
tac Tyr	tct Ser 690	aat Asn	aac Asn	acc Thr	att Ile	gct Ala 695	ata Ile	cct Pro	act Thr	aac Asn	ttt Phe 700	tca Ser	att Ile	agc Ser	att Ile	2112					

act Thr 705	aca Thr	gaa Glu	gta Val	atg Met	cct Pro 710	gtt Val	tct Ser	atg Met	gct Ala	aaa Lys 715	acc Thr	tcc Ser	gta Val	gat Asp	tgt Cys 720	2160
aat Asn	atg Met	tac Tyr	atc Ile	tgc Cys 725	gga Gly	gat Asp	tct Ser	act Thr	gaa Glu 730	tgt Cys	gct Ala	aat Asn	ttg Leu	ctt Leu 735	ctc Leu	2208
caa Gln	tat Tyr	ggc Gly	agc Ser 740	ttt Phe	tgc Cys	aca Thr	caa Gln	cta Leu 745	aat Asn	cgt Arg	gca Ala	ctc Leu	tca Ser 750	ggc Gly	att Ile	2256
gct Ala	gct Ala	gaa Glu 755	cag Gln	gat Asp	cgc Arg	aac Asn	aca Thr 760	cgt Arg	gaa Glu	gtg Val	ttc Phe	gct Ala 765	caa Gln	gtc Val	aaa Lys	2304
caa Gln 770	atg Met	tac Tyr	aaa Lys	acc Thr	cca Pro	act Thr 775	ttg Leu	aaa Lys	tat Tyr	ttt Phe	ggc Gly 780	ggc Gly	ttt Phe	aat Asn	ttt Phe	2352
tca Ser 785	caa Gln	ata Ile	tta Leu	cct Pro	gac Asp 790	cct Pro	cta Leu	aag Lys	cca Pro	act Thr 795	aag Lys	agg Arg	tct Ser	ttt Phe	att Ile 800	2400
gag Glu	gac Asp	ttg Leu	ctc Leu	ttt Phe 805	aat Asn	aag Lys	gtg Val	aca Thr	ctc Leu 810	gct Ala	gat Asp	gct Ala	ggc Gly	ttc Phe 815	atg Met	2448
aag Lys	caa Gln	tat Tyr	ggc Gly 820	gaa Glu	tgc Cys	cta Leu	ggc Gly	gat Asp 825	att Ile	aat Asn	gct Ala	aga Arg	gat Asp 830	ctc Leu	att Ile	2496
tgt Cys	gcg Ala	cag Gln 835	aag Lys	ttc Phe	aat Asn	gga Gly	ctt Leu 840	aca Thr	gtg Val	ttg Leu	cca Pro	cct Pro 845	ctg Leu	ctc Leu	act Thr	2544
gat Asp 850	gat Asp	atg Met	att Ile	gct Ala	gcc Ala	tac Tyr 855	act Thr	gct Ala	gct Ala	cta Leu	gtt Val 860	agt Ser	ggc Gly	act Thr	gcc Ala	2592
act Thr 865	gct Ala	gga Gly	tgg Trp	aca Thr	ttt Phe 870	ggc Gly	gct Ala	ggc Gly	gct Ala	gct Ala 875	ctt Leu	caa Gln	ata Ile	cct Pro	ttt Phe 880	2640
gct Ala	atg Met	caa Gln	atg Met	gca Ala 885	tat Tyr	agg Arg	ttc Phe	aat Asn	ggc Gly 890	att Ile	gga Gly	gtt Val	acc Thr	caa Gln 895	aat Asn	2688
gtt Val	ctc Leu	tat Tyr	gag Glu 900	aac Asn	caa Gln	aaa Lys	caa Gln	atc Ile 905	gcc Ala	aac Asn	caa Gln	ttt Phe	aac Asn 910	aag Lys	gcg Ala	2736
att Ile	agt Ser	caa Gln 915	att Ile	caa Gln	gaa Glu	tca Ser	ctt Leu 920	aca Thr	aca Thr	aca Thr	tca Ser	act Thr 925	gca Ala	ttg Leu	ggc Gly	2784
aag Lys	ctg Leu 930	caa Gln	gac Asp	gtt Val	gtt Val	aac Asn 935	cag Gln	aat Asn	gct Ala	caa Gln	gca Ala 940	tta Leu	aac Asn	aca Thr	ctt Leu	2832
gtt Val 945	aaa Lys	caa Gln	ctt Leu	agc Ser	tct Ser 950	aat Asn	ttt Phe	ggc Gly	gca Ala	att Ile 955	tca Ser	agt Ser	gtg Val	cta Leu	aat Asn 960	2880
gat Asp	atc Ile	ctt Leu	tcg Ser	cga Arg 965	ctt Leu	gat Asp	aaa Lys	gtc Val	gag Glu 970	gcg Ala	gag Glu	gta Val	caa Gln	att Ile 975	gac Asp	2928

agg tta att aca ggc aga ctt caa agc ctt caa acc tat gta aca caa Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln 980 985 990	2976
caa cta atc agg gct gct gaa atc agg gct tct gct aat ctt gct gct Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala 995 1000 1005	3024
act aaa atg tct gag tgt gtt ctt gga caa tca aaa aga gtt gac Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp 1010 1015 1020	3069
ttt tgt gga aag ggc tac cac ctt atg tcc ttc cca caa gca gcc Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala 1025 1030 1035	3114
ccg cat ggt gtt gtc ttc cta cat gtc acg tat gtg cca tcc cag Pro His Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln 1040 1045 1050	3159
gag agg aac ttc acc aca gcg cca gca att tgt cat gaa ggc aaa Glu Arg Asn Phe Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys 1055 1060 1065	3204
gca tac ttc cct cgt gaa ggt gtt ttt gtg ttt aat ggc act tct Ala Tyr Phe Pro Arg Glu Gly Val Phe Val Phe Asn Gly Thr Ser 1070 1075 1080	3249
tgg ttt att aca cag agg aac ttc ttt tct cca caa ata att act Trp Phe Ile Thr Gln Arg Asn Phe Phe Ser Pro Gln Ile Ile Thr 1085 1090 1095	3294
aca gac aat aca ttt gtc tca gga aat tgt gat gtc gtt att ggc Thr Asp Asn Thr Phe Val Ser Gly Asn Cys Asp Val Val Ile Gly 1100 1105 1110	3339
atc att aac aac aca gtt tat gat cct ctg caa cct gag ctc gac Ile Ile Asn Asn Thr Val Tyr Asp Pro Leu Gln Pro Glu Leu Asp 1115 1120 1125	3384
tca ttc aaa gaa gag ctg gac aag tac ttc aaa aat cat aca tca Ser Phe Lys Glu Glu Leu Asp Lys Tyr Phe Lys Asn His Thr Ser 1130 1135 1140	3429
cca gat gtt gat ctt ggc gac att tca ggc att aac gct tct gtc Pro Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val 1145 1150 1155	3474
gtc aac att caa aaa gaa att gac cgc ctc aat gag gtc gct aaa Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys 1160 1165 1170	3519
aat tta aat gaa tca ctc att gac ctt caa gaa ttg gga aaa tat Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu Gly Lys Tyr 1175 1180 1185	3564
gag caa tat att aaa tgg cct tgg tat gtt tgg ctc ggc ttc att Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Val Trp Leu Gly Phe Ile 1190 1195 1200	3609
gct gga cta att gcc atc gtc atg gtt aca atc ttg ctt tgt tgc Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile Leu Leu Cys Cys 1205 1210 1215	3654
atg act agt tgt tgc agt tgc ctc aag ggt gca tgc tct tgt ggt Met Thr Ser Cys Cys Ser Cys Leu Lys Gly Ala Cys Ser Cys Gly 1220 1225 1230	3699
tct tgc tgc aag ttt gat gag gat gac tct gag cca gtt ctc aag	3744

Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro Val Leu Lys
 1235 1240 1245

ggt gtc aaa tta cat tac aca taa
 Gly Val Lys Leu His Tyr Thr
 1250 1255

3768

<210> 2
 <211> 1255
 <212> PRT
 <213> SARS coronavirus Urbani
 <400> 2

Met Phe Ile Phe Leu Leu Phe Leu Thr Leu Thr Ser Gly Ser Asp Leu
 1 5 10 15

Asp Arg Cys Thr Thr Phe Asp Asp Val Gln Ala Pro Asn Tyr Thr Gln
 20 25 30

His Thr Ser Ser Met Arg Gly Val Tyr Tyr Pro Asp Glu Ile Phe Arg
 35 40 45

Ser Asp Thr Leu Tyr Leu Thr Gln Asp Leu Phe Leu Pro Phe Tyr Ser
 50 55 60

Asn Val Thr Gly Phe His Thr Ile Asn His Thr Phe Gly Asn Pro Val
 65 70 75 80

Ile Pro Phe Lys Asp Gly Ile Tyr Phe Ala Ala Thr Glu Lys Ser Asn
 85 90 95

Val Val Arg Gly Trp Val Phe Gly Ser Thr Met Asn Asn Lys Ser Gln
 100 105 110

Ser Val Ile Ile Ile Asn Asn Ser Thr Asn Val Val Ile Arg Ala Cys
 115 120 125

Asn Phe Glu Leu Cys Asp Asn Pro Phe Phe Ala Val Ser Lys Pro Met
 130 135 140

Gly Thr Gln Thr His Thr Met Ile Phe Asp Asn Ala Phe Asn Cys Thr
 145 150 155 160

Phe Glu Tyr Ile Ser Asp Ala Phe Ser Leu Asp Val Ser Glu Lys Ser
 165 170 175

Gly Asn Phe Lys His Leu Arg Glu Phe Val Phe Lys Asn Lys Asp Gly
 180 185 190

Phe Leu Tyr Val Tyr Lys Gly Tyr Gln Pro Ile Asp Val Val Arg Asp
 195 200 205

Leu Pro Ser Gly Phe Asn Thr Leu Lys Pro Ile Phe Lys Leu Pro Leu
 210 215 220

Gly Ile Asn Ile Thr Asn Phe Arg Ala Ile Leu Thr Ala Phe Ser Pro
 225 230 235 240
 Ala Gln Asp Ile Trp Gly Thr Ser Ala Ala Ala Tyr Phe Val Gly Tyr
 245 250 255
 Leu Lys Pro Thr Thr Phe Met Leu Lys Tyr Asp Glu Asn Gly Thr Ile
 260 265 270
 Thr Asp Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu Lys Cys
 275 280 285
 Ser Val Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr Ser Asn
 290 295 300
 Phe Arg Val Val Pro Ser Gly Asp Val Val Arg Phe Pro Asn Ile Thr
 305 310 315 320
 Asn Leu Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Lys Phe Pro Ser
 325 330 335
 Val Tyr Ala Trp Glu Arg Lys Lys Ile Ser Asn Cys Val Ala Asp Tyr
 340 345 350
 Ser Val Leu Tyr Asn Ser Thr Phe Phe Ser Thr Phe Lys Cys Tyr Gly
 355 360 365
 Val Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala
 370 375 380
 Asp Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly
 385 390 395 400
 Gln Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe
 405 410 415
 Met Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser
 420 425 430
 Thr Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu
 435 440 445
 Arg Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly
 450 455 460
 Lys Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp
 465 470 475 480
 Tyr Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val
 485 490 495

Val Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly
 500 505 510
 Pro Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn
 515 520 525
 Phe Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg
 530 535 540
 Phe Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp
 545 550 555 560
 Ser Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys
 565 570 575
 Ser Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ser Ser
 580 585 590
 Glu Val Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Asp Val Ser Thr
 595 600 605
 Ala Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr
 610 615 620
 Gly Asn Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly Ala Glu
 625 630 635 640
 His Val Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile
 645 650 655
 Cys Ala Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser Gln Lys
 660 665 670
 Ser Ile Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser Ile Ala
 675 680 685
 Tyr Ser Asn Asn Thr Ile Ala Ile Pro Thr Asn Phe Ser Ile Ser Ile
 690 695 700
 Thr Thr Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val Asp Cys
 705 710 715 720
 Asn Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu Leu Leu
 725 730 735
 Gln Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser Gly Ile
 740 745 750
 Ala Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys
 755 760 765

Gln Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe
 770 775 780
 Ser Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile
 785 790 795 800
 Glu Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met
 805 810 815
 Lys Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile
 820 825 830
 Cys Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr
 835 840 845
 Asp Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala
 850 855 860
 Thr Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe
 865 870 875 880
 Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn
 885 890 895
 Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala
 900 905 910
 Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly
 915 920 925
 Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu
 930 935 940
 Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn
 945 950 955 960
 Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp
 965 970 975
 Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln
 980 985 990
 Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala
 995 1000 1005
 Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp
 1010 1015 1020
 Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala
 1025 1030 1035
 Pro His Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln
 Page 9

1040		1045		1050
Glu Arg Asn Phe Thr Thr	Ala 1060	Pro Ala Ile Cys	His 1065	Glu Gly Lys
Ala Tyr Phe Pro Arg Glu	Gly 1075	Val Phe Val Phe	Asn 1080	Gly Thr Ser
Trp Phe Ile Thr Gln Arg	Asn 1090	Phe Phe Ser Pro	Gln 1095	Ile Ile Thr
Thr Asp Asn Thr Phe Val	Ser 1105	Gly Asn Cys Asp	Val 1110	Val Ile Gly
Ile Ile Asn Asn Thr Val	Tyr 1120	Asp Pro Leu Gln	Pro 1125	Glu Leu Asp
Ser Phe Lys Glu Glu Leu	Asp 1135	Lys Tyr Phe Lys	Asn 1140	His Thr Ser
Pro Asp Val Asp Leu Gly	Asp 1150	Ile Ser Gly Ile	Asn 1155	Ala Ser Val
Val Asn Ile Gln Lys Glu	Ile 1165	Asp Arg Leu Asn	Glu 1170	Val Ala Lys
Asn Leu Asn Glu Ser Leu	Ile 1180	Asp Leu Gln Glu	Leu 1185	Gly Lys Tyr
Glu Gln Tyr Ile Lys Trp	Pro 1195	Trp Tyr Val Trp	Leu 1200	Gly Phe Ile
Ala Gly Leu Ile Ala Ile	Val 1210	Met Val Thr Ile	Leu 1215	Leu Cys Cys
Met Thr Ser Cys Cys Ser	Cys 1225	Leu Lys Gly Ala	Cys 1230	Ser Cys Gly
Ser Cys Cys Lys Phe Asp	Glu 1240	Asp Asp Ser Glu	Pro 1245	Val Leu Lys
Gly Val Lys Leu His Tyr	Thr 1255			

<210> 3
 <211> 390
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(390)

<400> 3
 atg caa atg gca tat agg ttc aat ggc att gga gtt acc caa aat gtt 48
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 1 5 10 15
 ctc tat gag aac caa aaa caa atc gcc aac caa ttt aac aag gcg att 96
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 20 25 30
 agt caa att caa gaa tca ctt aca aca aca tca act gca ttg ggc aag 144
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 35 40 45
 ctg caa gac gtt gtt aac cag aat gct caa gca tta aac aca ctt gtt 192
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 50 55 60
 aaa caa ctt agc tct aat ttt ggt gca att tca agt gtg cta aat gat 240
 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 65 70 75 80
 atc ctt tcg cga ctt gat aaa gtc gag gcg gag gta caa att gac agg 288
 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
 85 90 95
 tta att aca ggc aga ctt caa agc ctt caa acc tat gta aca caa caa 336
 Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
 100 105 110
 cta atc agg gct gct gaa atc agg gct tct gct aat ctt gct gct act 384
 Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
 115 120 125
 aaa atg 390
 Lys Met
 130

<210> 4
 <211> 130
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 4
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 1 5 10 15
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 20 25 30
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 35 40 45
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 50 55 60
 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 65 70 75 80
 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg
 85 90 95

Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln
 100 105 110

Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala Thr
 115 120 125

Lys Met
 130

<210> 5
 <211> 276
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(276)

<400> 5
 atg caa atg gca tat agg ttc aat ggc att gga gtt acc caa aat gtt 48
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 1 5 10 15
 ctc tat gag aac caa aaa caa atc gcc aac caa ttt aac aag gcg att 96
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 20 25 30
 agt caa att caa gaa tca ctt aca aca aca tca act gca ttg ggc aag 144
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 35 40 45
 ctg caa gac gtt gtt aac cag aat gct caa gca tta aac aca ctt gtt 192
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 50 55 60
 aaa caa ctt agc tct aat ttt ggt gca att tca agt gtg cta aat gat 240
 Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 65 70 75 80
 atc ctt tcg cga ctt gat aaa gtc gag gcg gag gta 276
 Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val
 85 90

<210> 6
 <211> 92
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 6
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 1 5 10 15
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 20 25 30
 Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 35 40 45
 Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
 50 55 60

Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp
 65 70 75 80

Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val
 85 90

<210> 7
 <211> 174
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(174)

<400> 7
 att caa gaa tca ctt aca aca aca tca act gca ttg ggc aag ctg caa 48
 Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15
 gac gtt gtt aac cag aat gct caa gca tta aac aca ctt gtt aaa caa 96
 Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30
 ctt agc tct aat ttt ggt gca att tca agt gtg cta aat gat atc ctt 144
 Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile Leu
 35 40 45
 tcg cga ctt gat aaa gtc gag gcg gag gta 174
 Ser Arg Leu Asp Lys Val Glu Ala Glu Val
 50 55

<210> 8
 <211> 58
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 8
 Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15
 Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30
 Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile Leu
 35 40 45
 Ser Arg Leu Asp Lys Val Glu Ala Glu Val
 50 55

<210> 9
 <211> 141
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS

<222> (1)..(141)

<400> 9

ttg ggc aag ctg caa gac gtt gtt aac cag aat gct caa gca tta aac	48
Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn	
1 5 10 15	

aca ctt gtt aaa caa ctt agc tct aat ttt ggt gca att tca agt gtg	96
Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val	
20 25 30	

cta aat gat atc ctt tcg cga ctt gat aaa gtc gag gcg gag gta	141
Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val	
35 40 45	

<210> 10

<211> 47

<212> PRT

<213> SARS coronavirus Urbani

<400> 10

Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn	
1 5 10 15	

Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val	
20 25 30	

Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val	
35 40 45	

<210> 11

<211> 114

<212> DNA

<213> SARS coronavirus Urbani

<220>

<221> CDS

<222> (1)..(114)

<400> 11

caa att gac agg tta att aca ggc aga ctt caa agc ctt caa acc tat	48
Gln Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr	
1 5 10 15	

gta aca caa caa cta atc agg gct gct gaa atc agg gct tct gct aat	96
Val Thr Gln Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn	
20 25 30	

ctt gct gct act aaa atg	114
Leu Ala Ala Thr Lys Met	
35	

<210> 12

<211> 38

<212> PRT

<213> SARS coronavirus Urbani

<400> 12

Gln Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr	
1 5 10 15	

Val Thr Gln Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn
 20 25 30

Leu Ala Ala Thr Lys Met
 35

<210> 13
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 13
 atg caa atg gca tat agg ttc aat ggc att gga gtt acc caa aat gtt 48
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 1 5 10 15
 ctc tat gag aac caa aaa caa atc gcc aac caa ttt aac aag gcg att 96
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 20 25 30
 agt caa att 105
 Ser Gln Ile
 35

<210> 14
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 14
 Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn Val
 1 5 10 15
 Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile
 20 25 30
 Ser Gln Ile
 35

<210> 15
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 15
 ttc aat ggc att gga gtt acc caa aat gtt ctc tat gag aac caa aaa 48
 Phe Asn Gly Ile Gly Val Thr Gln Asn Val Leu Tyr Glu Asn Gln Lys
 1 5 10 15
 caa atc gcc aac caa ttt aac aag gcg att agt caa att caa gaa tca 96
 Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln Ile Gln Glu Ser
 Page 15

20 25 30 105
 ctt aca aca
 Leu Thr Thr
 35

 <210> 16
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

 <400> 16
 Phe Asn Gly Ile Gly Val Thr Gln Asn Val Leu Tyr Glu Asn Gln Lys
 1 5 10 15

 Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln Ile Gln Glu Ser
 20 25 30

 Leu Thr Thr
 35

 <210> 17
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

 <220>
 <221> CDS
 <222> (1)..(105)

 <400> 17
 caa aat gtt ctc tat gag aac caa aaa caa atc gcc aac caa ttt aac 48
 Gln Asn Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn
 1 5 10 15

 aag gcg att agt caa att caa gaa tca ctt aca aca aca tca act gca 96
 Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala
 20 25 30

 ttg ggc aag 105
 Leu Gly Lys
 35

 <210> 18
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

 <400> 18
 Gln Asn Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn
 1 5 10 15

 Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala
 20 25 30

 Leu Gly Lys
 35

<210> 19
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 19
 caa aaa caa atc gcc aac caa ttt aac aag gcg att agt caa att caa 48
 Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln Ile Gln
 1 5 10 15
 gaa tca ctt aca aca aca tca act gca ttg ggc aag ctg caa gac gtt 96
 Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val
 20 25 30
 gtt aac cag 105
 Val Asn Gln
 35

<210> 20
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 20
 Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala Ile Ser Gln Ile Gln
 1 5 10 15
 Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val
 20 25 30
 Val Asn Gln
 35

<210> 21
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 21
 ttt aac aag gcg att agt caa att caa gaa tca ctt aca aca aca tca 48
 Phe Asn Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser
 1 5 10 15
 act gca ttg ggc aag ctg caa gac gtt gtt aac cag aat gct caa gca 96
 Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala
 20 25 30
 tta aac aca 105
 Leu Asn Thr
 35

<210> 22
 <211> 35

<212> PRT
 <213> SARS coronavirus Urbani

<400> 22

Phe Asn Lys Ala Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser
 1 5 10 15

Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala
 20 25 30

Leu Asn Thr
 35

<210> 23
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 23
 att caa gaa tca ctt aca aca aca tca act gca ttg ggc aag ctg caa 48
 Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

gac gtt gtt aac cag aat gct caa gca tta aac aca ctt gtt aaa caa 96
 Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30

ctt agc tct 105
 Leu Ser Ser
 35

<210> 24
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 24

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 25
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 25
 aca tca act gca ttg ggc aag ctg caa gac gtt gtt aac cag aat gct 48
 Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala
 1 5 10 15
 caa gca tta aac aca ctt gtt aaa caa ctt agc tct aat ttt ggt gca 96
 Gln Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala
 20 25 30
 att tca agt 105
 Ile Ser Ser
 35

<210> 26
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 26
 Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala
 1 5 10 15
 Gln Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala
 20 25 30
 Ile Ser Ser
 35

<210> 27
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 27
 caa gac gtt gtt aac cag aat gct caa gca tta aac aca ctt gtt aaa 48
 Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys
 1 5 10 15
 caa ctt agc tct aat ttt ggt gca att tca agt gtg cta aat gat atc 96
 Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile
 20 25 30
 ctt tcg cga 105
 Leu Ser Arg
 35

<210> 28
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 28
 Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys
 1 5 10 15

Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile
 20 25 30

Leu Ser Arg
 35

<210> 29
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 29
 gct caa gca tta aac aca ctt gtt aaa caa ctt agc tct aat ttt ggt 48
 Ala Gln Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly
 1 5 10 15
 gca att tca agt gtg cta aat gat atc ctt tcg cga ctt gat aaa gtc 96
 Ala Ile Ser Ser Val Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val
 20 25 30
 gag gcg gag 105
 Glu Ala Glu
 35

<210> 30
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani
 <400> 30

Ala Gln Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly
 1 5 10 15
 Ala Ile Ser Ser Val Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val
 20 25 30

Glu Ala Glu
 35

<210> 31
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 31
 gtt aaa caa ctt agc tct aat ttt ggt gca att tca agt gtg cta aat 48
 Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn
 1 5 10 15
 gat atc ctt tcg cga ctt gat aaa gtc gag gcg gag gta caa att gac 96
 Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp
 20 25 30

agg tta att
Arg Leu Ile 105
35

<210> 32
<211> 35
<212> PRT
<213> SARS coronavirus Urbani

<400> 32

Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn
1 5 10 15

Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp
20 25 30

Arg Leu Ile
35

<210> 33
<211> 105
<212> DNA
<213> SARS coronavirus Urbani

<220>
<221> CDS
<222> (1)..(105)

<400> 33
ttt ggt gca att tca agt gtg cta aat gat atc ctt tcg cga ctt gat 48
Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile Leu Ser Arg Leu Asp
1 5 10 15

aaa gtc gag gcg gag gta caa att gac agg tta att aca ggc aga ctt 96
Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu Ile Thr Gly Arg Leu
20 25 30

caa agc ctt 105
Gln Ser Leu
35

<210> 34
<211> 35
<212> PRT
<213> SARS coronavirus Urbani

<400> 34

Phe Gly Ala Ile Ser Ser Val Leu Asn Asp Ile Leu Ser Arg Leu Asp
1 5 10 15

Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu Ile Thr Gly Arg Leu
20 25 30

Gln Ser Leu
35

<210> 35

<211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 35
 cta aat gat atc ctt tcg cga ctt gat aaa gtc gag gcg gag gta caa 48
 Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
 1 5 10 15
 att gac agg tta att aca ggc aga ctt caa agc ctt caa acc tat gta 96
 Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val
 20 25 30
 aca caa caa 105
 Thr Gln Gln
 35

<210> 36
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 36
 Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
 1 5 10 15
 Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val
 20 25 30
 Thr Gln Gln
 35

<210> 37
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 37
 ctt gat aaa gtc gag gcg gag gta caa att gac agg tta att aca ggc 48
 Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu Ile Thr Gly
 1 5 10 15
 aga ctt caa agc ctt caa acc tat gta aca caa caa cta atc agg gct 96
 Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu Ile Arg Ala
 20 25 30
 gct gaa atc 105
 Ala Glu Ile
 35

<210> 38
 <211> 35
 <212> PRT

<213> SARS coronavirus Urbani

<400> 38

Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp Arg Leu Ile Thr Gly
1 5 10 15

Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln Gln Leu Ile Arg Ala
20 25 30

Ala Glu Ile
35

<210> 39

<211> 123

<212> DNA

<213> SARS coronavirus Urbani

<220>

<221> CDS

<222> (1)..(123)

<400> 39
gat gtt gat ctt ggc gac att tca ggc att aac gct tct gtc gtc aac 48
Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn
1 5 10 15

att caa aaa gaa att gac cgc ctc aat gag gtc gct aaa aat tta aat 96
Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn
20 25 30

gaa tca ctc att gac ctt caa gaa ttg 123
Glu Ser Leu Ile Asp Leu Gln Glu Leu
35 40

<210> 40

<211> 41

<212> PRT

<213> SARS coronavirus Urbani

<400> 40

Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn
1 5 10 15

Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn
20 25 30

Glu ser Leu Ile Asp Leu Gln Glu Leu
35 40

<210> 41

<211> 63

<212> DNA

<213> SARS coronavirus Urbani

<220>

<221> CDS

<222> (1)..(63)

<400> 41
 att gac cgc ctc aat gag gtc gct aaa aat tta aat gaa tca ctc att 48
 Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile
 1 5 10 15
 gac ctt caa gaa ttg 63
 Asp Leu Gln Glu Leu
 20

<210> 42
 <211> 21
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 42
 Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile
 1 5 10 15
 Asp Leu Gln Glu Leu
 20

<210> 43
 <211> 84
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(84)

<400> 43
 gtc gtc aac att caa aaa gaa att gac cgc ctc aat gag gtc gct aaa 48
 Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys
 1 5 10 15
 aat tta aat gaa tca ctc att gac ctt caa gaa ttg 84
 Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
 20 25

<210> 44
 <211> 28
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 44
 Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys
 1 5 10 15
 Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
 20 25

<210> 45
 <211> 105
 <212> DNA
 <213> SARS coronavirus Urbani

<220>
 <221> CDS
 <222> (1)..(105)

<400> 45
 att tca ggc att aac gct tct gtc gtc aac att caa aaa gaa att gac 48
 ile ser gly ile asn ala ser val val asn ile gln lys glu ile asp
 1 5 10 15
 cgc ctc aat gag gtc gct aaa aat tta aat gaa tca ctc att gac ctt 96
 arg leu asn glu val ala lys asn leu asn glu ser leu ile asp leu
 20 25 30
 caa gaa ttg 105
 gln glu leu
 35

<210> 46
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 46
 ile ser gly ile asn ala ser val val asn ile gln lys glu ile asp
 1 5 10 15
 arg leu asn glu val ala lys asn leu asn glu ser leu ile asp leu
 20 25 30
 gln glu leu
 35

<210> 47
 <211> 49
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 47
 gln lys gln ile ala asn gln phe asn lys ala ile ser gln ile gln
 1 5 10 15
 glu ser leu thr thr thr ser thr ala leu gly lys leu gln asp val
 20 25 30
 val asn gln asn ala gln ala leu asn thr leu val lys gln leu ser
 35 40 45

ser

<210> 48
 <211> 36
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 48
 asp ile ser gly ile asn ala ser val val asn ile gln lys glu ile
 1 5 10 15

asp arg leu asn glu val ala lys asn leu asn glu ser leu ile asp

20

25

30

Leu Gln Glu Leu
35

<210> 49
 <211> 1255
 <212> PRT
 <213> SARS coronavirus Urbani
 <400> 49

Met Phe Ile Phe Leu Leu Phe Leu Thr Leu Thr Ser Gly Ser Asp Leu
1 5 10 15

Asp Arg Cys Thr Thr Phe Asp Asp Val Gln Ala Pro Asn Tyr Thr Gln
20 25 30

His Thr Ser Ser Met Arg Gly Val Tyr Tyr Pro Asp Glu Ile Phe Arg
35 40 45

Ser Asp Thr Leu Tyr Leu Thr Gln Asp Leu Phe Leu Pro Phe Tyr Ser
50 55 60

Asn Val Thr Gly Phe His Thr Ile Asn His Thr Phe Gly Asn Pro Val
65 70 75 80

Ile Pro Phe Lys Asp Gly Ile Tyr Phe Ala Ala Thr Glu Lys Ser Asn
85 90 95

Val Val Arg Gly Trp Val Phe Gly Ser Thr Met Asn Asn Lys Ser Gln
100 105 110

Ser Val Ile Ile Ile Asn Asn Ser Thr Asn Val Val Ile Arg Ala Cys
115 120 125

Asn Phe Glu Leu Cys Asp Asn Pro Phe Phe Ala Val Ser Lys Pro Met
130 135 140

Gly Thr Gln Thr His Thr Met Ile Phe Asp Asn Ala Phe Asn Cys Thr
145 150 155 160

Phe Glu Tyr Ile Ser Asp Ala Phe Ser Leu Asp Val Ser Glu Lys Ser
165 170 175

Gly Asn Phe Lys His Leu Arg Glu Phe Val Phe Lys Asn Lys Asp Gly
180 185 190

Phe Leu Tyr Val Tyr Lys Gly Tyr Gln Pro Ile Asp Val Val Arg Asp
195 200 205

Leu Pro Ser Gly Phe Asn Thr Leu Lys Pro Ile Phe Lys Leu Pro Leu
210 215 220

Gly Ile Asn Ile Thr Asn Phe Arg Ala Ile Leu Thr Ala Phe Ser Pro
 225 230 235 240
 Ala Gln Asp Ile Trp Gly Thr Ser Ala Ala Ala Tyr Phe Val Gly Tyr
 245 250 255
 Leu Lys Pro Thr Thr Phe Met Leu Lys Tyr Asp Glu Asn Gly Thr Ile
 260 265 270
 Thr Asp Ala Val Asp Cys Ser Gln Asn Pro Leu Ala Glu Leu Lys Cys
 275 280 285
 Ser Val Lys Ser Phe Glu Ile Asp Lys Gly Ile Tyr Gln Thr Ser Asn
 290 295 300
 Phe Arg Val Val Pro Ser Gly Asp Val Val Arg Phe Pro Asn Ile Thr
 305 310 315 320
 Asn Leu Cys Pro Phe Gly Glu Val Phe Asn Ala Thr Lys Phe Pro Ser
 325 330 335
 Val Tyr Ala Trp Glu Arg Lys Lys Ile Ser Asn Cys Val Ala Asp Tyr
 340 345 350
 Ser Val Leu Tyr Asn Ser Thr Phe Phe Ser Thr Phe Lys Cys Tyr Gly
 355 360 365
 Val Ser Ala Thr Lys Leu Asn Asp Leu Cys Phe Ser Asn Val Tyr Ala
 370 375 380
 Asp Ser Phe Val Val Lys Gly Asp Asp Val Arg Gln Ile Ala Pro Gly
 385 390 395 400
 Gln Thr Gly Val Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe
 405 410 415
 Met Gly Cys Val Leu Ala Trp Asn Thr Arg Asn Ile Asp Ala Thr Ser
 420 425 430
 Thr Gly Asn Tyr Asn Tyr Lys Tyr Arg Tyr Leu Arg His Gly Lys Leu
 435 440 445
 Arg Pro Phe Glu Arg Asp Ile Ser Asn Val Pro Phe Ser Pro Asp Gly
 450 455 460
 Lys Pro Cys Thr Pro Pro Ala Leu Asn Cys Tyr Trp Pro Leu Asn Asp
 465 470 475 480
 Tyr Gly Phe Tyr Thr Thr Thr Gly Ile Gly Tyr Gln Pro Tyr Arg Val
 485 490 495

Val Val Leu Ser Phe Glu Leu Leu Asn Ala Pro Ala Thr Val Cys Gly
 500 505 510
 Pro Lys Leu Ser Thr Asp Leu Ile Lys Asn Gln Cys Val Asn Phe Asn
 515 520 525
 Phe Asn Gly Leu Thr Gly Thr Gly Val Leu Thr Pro Ser Ser Lys Arg
 530 535 540
 Phe Gln Pro Phe Gln Gln Phe Gly Arg Asp Val Ser Asp Phe Thr Asp
 545 550 555 560
 Ser Val Arg Asp Pro Lys Thr Ser Glu Ile Leu Asp Ile Ser Pro Cys
 565 570 575
 Ser Phe Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Ala Ser Ser
 580 585 590
 Glu Val Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Asp Val Ser Thr
 595 600 605
 Ala Ile His Ala Asp Gln Leu Thr Pro Ala Trp Arg Ile Tyr Ser Thr
 610 615 620
 Gly Asn Asn Val Phe Gln Thr Gln Ala Gly Cys Leu Ile Gly Ala Glu
 625 630 635 640
 His Val Asp Thr Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile
 645 650 655
 Cys Ala Ser Tyr His Thr Val Ser Leu Leu Arg Ser Thr Ser Gln Lys
 660 665 670
 Ser Ile Val Ala Tyr Thr Met Ser Leu Gly Ala Asp Ser Ser Ile Ala
 675 680 685
 Tyr Ser Asn Asn Thr Ile Ala Ile Pro Thr Asn Phe Ser Ile Ser Ile
 690 695 700
 Thr Thr Glu Val Met Pro Val Ser Met Ala Lys Thr Ser Val Asp Cys
 705 710 715 720
 Asn Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ala Asn Leu Leu Leu
 725 730 735
 Gln Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Ser Gly Ile
 740 745 750
 Ala Ala Glu Gln Asp Arg Asn Thr Arg Glu Val Phe Ala Gln Val Lys
 755 760 765
 Gln Met Tyr Lys Thr Pro Thr Leu Lys Tyr Phe Gly Gly Phe Asn Phe
 Page 28

770

775

780

Ser Gln Ile Leu Pro Asp Pro Leu Lys Pro Thr Lys Arg Ser Phe Ile
 785 790 795 800
 Glu Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly Phe Met
 805 810 815
 Lys Gln Tyr Gly Glu Cys Leu Gly Asp Ile Asn Ala Arg Asp Leu Ile
 820 825 830
 Cys Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu Leu Thr
 835 840 845
 Asp Asp Met Ile Ala Ala Tyr Thr Ala Ala Leu Val Ser Gly Thr Ala
 850 855 860
 Thr Ala Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile Pro Phe
 865 870 875 880
 Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr Gln Asn
 885 890 895
 Val Leu Tyr Glu Asn Gln Lys Gln Ile Ala Asn Gln Phe Asn Lys Ala
 900 905 910
 Ile Ser Gln Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly
 915 920 925
 Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu
 930 935 940
 Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val Leu Asn
 945 950 955 960
 Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln Ile Asp
 965 970 975
 Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val Thr Gln
 980 985 990
 Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn Leu Ala Ala
 995 1000 1005
 Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys Arg Val Asp
 1010 1015 1020
 Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro Gln Ala Ala
 1025 1030 1035
 Pro His Gly Val Val Phe Leu His Val Thr Tyr Val Pro Ser Gln
 1040 1045 1050

Glu Arg Asn Phe Thr Thr Ala Pro Ala Ile Cys His Glu Gly Lys
 1055 1060 1065
 Ala Tyr Phe Pro Arg Glu Gly Val Phe Val Phe Asn Gly Thr Ser
 1070 1075 1080
 Trp Phe Ile Thr Gln Arg Asn Phe Phe Ser Pro Gln Ile Ile Thr
 1085 1090 1095
 Thr Asp Asn Thr Phe Val Ser Gly Asn Cys Asp Val Val Ile Gly
 1100 1105 1110
 Ile Ile Asn Asn Thr Val Tyr Asp Pro Leu Gln Pro Glu Leu Asp
 1115 1120 1125
 Ser Phe Lys Glu Glu Leu Asp Lys Tyr Phe Lys Asn His Thr Ser
 1130 1135 1140
 Pro Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val
 1145 1150 1155
 Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys
 1160 1165 1170
 Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu Gly Lys Tyr
 1175 1180 1185
 Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Val Trp Leu Gly Phe Ile
 1190 1195 1200
 Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile Leu Leu Cys Cys
 1205 1210 1215
 Met Thr Ser Cys Cys Ser Cys Leu Lys Gly Ala Cys Ser Cys Gly
 1220 1225 1230
 Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro Val Leu Lys
 1235 1240 1245
 Gly Val Lys Leu His Tyr Thr
 1250 1255

<210> 50
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 50

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 51
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<400> 51

Ile Gln Ala Ala Leu Thr Lys Thr Ser Ala Ala Leu Gly Lys Leu Gln
 1 5 10 15

Ala Ala Val Asn Arg Asn Ala Ala Ala Leu Asn Lys Leu Val Lys Ala
 20 25 30

Leu Ser Ser
 35

<210> 52
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (1)..(35)
 <223> X=aminoisobutyric acid

<400> 52

Ile Gln Glu Ser Leu Thr Xaa Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

Asp Val Val Asn Xaa Asn Ala Gln Ala Leu Asn Xaa Leu Val Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 53
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE

<222> (1)..(35)
 <223> X=dipropyl or dibutyl glycine

<400> 53

Ile Gln Glu Ser Leu Thr Xaa Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

Asp Val Val Asn Xaa Asn Ala Gln Ala Leu Asn Xaa Leu Val Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 54
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (17)..(21)
 <223> i,i+4 lactam bridge

<400> 54

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

Glu Val Val Asn Lys Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 55
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (7)..(11)
 <223> i, i+4 lactam bridge

<220>
 <221> MISC_FEATURE
 <222> (28)..(32)
 <223> i, i+4 lactam bridge

<400> 55

Ile Gln Glu Ser Leu Thr Glu Thr Ser Thr Lys Leu Gly Lys Leu Gln
 1 5 10 15

Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Glu Leu Val Lys Lys
 20 25 30

Leu Ser Ser
 35

<210> 56
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (14)..(21)
 <223> i, i+7 bridge

<400> 56

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Glu Leu Gln
 1 5 10 15

Asp Val Val Asn Glu Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 57
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<400> 57

Ile Ile Glu Ser Leu Thr Thr Thr Ile Thr Ala Leu Gly Lys Leu Ile
 1 5 10 15

Asp Val Leu Asn Gln Asn Ile Gln Ala Leu Asn Thr Leu Ile Lys Gln
 20 25 30

Leu Ser Ser
 35

<210> 58
 <211> 35
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 58

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 20 25 30

Gln Glu Leu
 35

<210> 59
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 59

Ile Ala Ala Ile Asn Lys Ser Val Ala Ala Ile Gln Lys Glu Ile Ala
 1 5 10 15

Arg Leu Asn Glu Val Ala Lys Ala Leu Asn Ala Ser Leu Ile Arg Leu
 20 25 30

Gln Ala Leu
 35

<210> 60
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (1)..(35)
 <223> X=aminoisobutyric acid (Aib)

<400> 60

Ile Ser Gly Ile Asn Xaa Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Xaa Val Ala Lys Asn Leu Asn Xaa Ser Leu Ile Asp Leu
 20 25 30

Gln Glu Leu
 35

<210> 61
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<220>

<221> MISC_FEATURE
 <222> (1)..(35)
 <223> X=dipropyl or dibutyl glycine
 <400> 61

Ile Ser Gly Ile Asn Xaa Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Xaa Val Ala Lys Asn Leu Asn Xaa Ser Leu Ile Asp Leu
 20 25 30

Gln Glu Leu
 35

<210> 62
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (16)..(20)
 <223> i,i+4 lactam bridge

<400> 62

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Glu
 1 5 10 15

Arg Leu Asn Lys Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 20 25 30

Gln Glu Leu
 35

<210> 63
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (6)..(10)
 <223> i,i+4 lactam bridge

<220>
 <221> MISC_FEATURE
 <222> (27)..(31)
 <223> i,i+4 lactam bridge

<400> 63

Ile Ser Gly Ile Asn Glu Ser Val Val Lys Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Lys Leu
 20 25 30

Gln Glu Leu
 35

<210> 64
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<220>
 <221> MISC_FEATURE
 <222> (13)..(20)
 <223> i,i+7 bridge

<400> 64

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Glu Glu Ile Asp
 1 5 10 15

Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 20 25 30

Gln Glu Leu
 35

<210> 65
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 65

Ile Ser Gly Ile Asn Ala Ser Ile Val Asn Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Glu Val Ile Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu
 20 25 30

Gln Glu Leu
 35

<210> 66
 <211> 39
 <212> PRT
 <213> SARS coronavirus Urbani

<400> 66

Asp Leu Gly Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln
 1 5 10 15

Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser
 20 25 30

Leu Ile Asp Leu Gln Glu Leu
 35

<210> 67
 <211> 36
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 67

Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile
 1 5 10 15

Asp Arg Leu Asn Glu Val Ile Lys Asn Leu Asn Glu Ser Leu Ile Asp
 20 25 30

Leu Gln Glu Leu
 35

<210> 68
 <211> 36
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 68

Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile
 1 5 10 15

Ala Arg Leu Asn Glu Val Ala Lys Ala Leu Asn Glu Ser Leu Ile Asp
 20 25 30

Leu Gln Glu Leu
 35

<210> 69
 <211> 36
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 69

Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile
 1 5 10 15

Ala Arg Leu Asn Glu Val Ile Lys Ala Leu Asn Glu Ser Leu Ile Asp
 Page 37

20

25

30

Leu Gln Glu Leu
35

<210> 70
<211> 36
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide
<400> 70

Asp Ile Ala Ala Ile Asn Ala Ser Val Ala Asn Ile Gln Lys Glu Ile
1 5 10 15

Ala Arg Leu Asn Glu Val Ala Lys Ala Leu Asn Glu Ser Leu Ala Ala
20 25 30

Leu Gln Ala Leu
35

<210> 71
<211> 36
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<220>
<221> MISC_FEATURE
<222> (17)..(21)
<223> relative to residues 1166 to 1170; lactam bridge

<400> 71

Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile
1 5 10 15

Glu Arg Leu Asn Lys Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp
20 25 30

Leu Gln Glu Leu
35

<210> 72
<211> 36
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<220>
<221> MISC_FEATURE
<222> (17)..(21)

<223> salt bridge

<400> 72

Asp Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile
1 5 10 15

Glu Arg Leu Asn Lys Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp
20 25 30

Leu Gln Glu Leu
35

<210> 73

<211> 36

<212> PRT

<213> Artificial

<220>

<223> synthetic peptide

<400> 73

Asp Ile Glu Glu Ile Asn Lys Lys Val Glu Glu Ile Gln Lys Lys Ile
1 5 10 15

Glu Glu Leu Asn Lys Lys Ala Glu Glu Leu Asn Lys Lys Leu Glu Glu
20 25 30

Leu Gln Lys Lys
35

<210> 74

<211> 36

<212> PRT

<213> Artificial

<220>

<223> synthetic peptide

<220>

<221> MISC_FEATURE

<222> (1)..(36)

<223> Introduction of salt bridges relating to mutations departing from
SEQ ID NO:48 (HR-C4a extended; 1150-1185)

<400> 74

Asp Ile Ser Gly Ile Asn Ala Ser Val Val Glu Ile Gln Lys Lys Ile
1 5 10 15

Glu Glu Leu Asn Lys Lys Ala Glu Glu Leu Asn Lys Lys Leu Ile Asp
20 25 30

Leu Gln Glu Leu
35

<210> 75

<211> 7

<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 75

Ile Gln Glu Ser Leu Thr Thr
1 5

<210> 76
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 76

Thr Ser Thr Ala Leu Gly Lys
1 5

<210> 77
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 77

Leu Gln Asp Val Val Asn Gln
1 5

<210> 78
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 78

Asn Ala Gln Ala Leu Asn Thr
1 5

<210> 79
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 79

Leu Val Lys Gln Leu Ser Ser
1 5

<210> 80

<211> 14
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 80

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys
 1 5 10

<210> 81
 <211> 14
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 81

Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln
 1 5 10

<210> 82
 <211> 14
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 82

Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr
 1 5 10

<210> 83
 <211> 14
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 83

Asn Ala Gln Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser
 1 5 10

<210> 84
 <211> 21
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 84

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
 1 5 10 15

Asp Val Val Asn Gln
20

<210> 85
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 85

Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala
1 5 10 15

Gln Ala Leu Asn Thr
20

<210> 86
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 86

Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr Leu Val
1 5 10 15

Lys Gln Leu Ser Ser
20

<210> 87
<211> 28
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 87

Ile Gln Glu Ser Leu Thr Thr Thr Ser Thr Ala Leu Gly Lys Leu Gln
1 5 10 15

Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn Thr
20 25

<210> 88
<211> 28
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 88

Thr Ser Thr Ala Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala
Page 42

1 5 10 15

Gln Ala Leu Asn Thr Leu Val Lys Gln Leu Ser Ser
20 25

<210> 89
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 89

Ile Ser Gly Ile Asn Ala Ser
1 5

<210> 90
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 90

Val Val Asn Ile Gln Lys Glu
1 5

<210> 91
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 91

Ile Asp Arg Leu Asn Glu Val
1 5

<210> 92
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic peptide

<400> 92

Ala Lys Asn Leu Asn Glu Ser
1 5

<210> 93
<211> 7
<212> PRT
<213> Artificial

<220>

<223> Synthetic peptide

<400> 93

Leu Ile Asp Leu Gln Glu Leu
1 5

<210> 94

<211> 14

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 94

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu
1 5 10

<210> 95

<211> 14

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 95

Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val
1 5 10

<210> 96

<211> 14

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 96

Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser
1 5 10

<210> 97

<211> 14

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 97

Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
1 5 10

<210> 98

<211> 21

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 98

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Glu Val
 20

<210> 99

<211> 21

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 99

Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys
 1 5 10 15

Asn Leu Asn Glu Ser
 20

<210> 100

<211> 21

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 100

Ile Asp Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser Leu Ile
 1 5 10 15

Asp Leu Gln Glu Leu
 20

<210> 101

<211> 28

<212> PRT

<213> Artificial

<220>

<223> Synthetic peptide

<400> 101

Ile Ser Gly Ile Asn Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp
 1 5 10 15

Arg Leu Asn Glu Val Ala Lys Asn Leu Asn Glu Ser
 20 25

<210> 102

<211> 28

<212> PRT
 <213> Artificial

<220>
 <223> Synthetic peptide

<400> 102

Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu Val Ala Lys
 1 5 10 15

Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
 20 25

<210> 103
 <211> 36
 <212> DNA
 <213> Artificial

<220>
 <223> Synthetic construct

<400> 103
 gtacgtacgc atatgatgca aatggcatat aggttc

36

<210> 104
 <211> 58
 <212> DNA
 <213> Artificial

<220>
 <223> Synthetic construct

<400> 104
 gcgaattccc ttgtgctgctg tcgtcgcagc cgcctacctc cgcctcgact ttatcaag

58

<210> 105
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <223> Synthetic construct

<400> 105
 caccatgttt attttcttat tattt

25

<210> 106
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <223> Synthetic construct

<400> 106
 ttatgtgtaa tgtaatttga cacc

24